

**CLAIMS**

What is claimed is:

- 1 1. A method for delivering content over a network  
2 having at least one requesting endpoint and at  
3 least one node, wherein the at least one node  
4 stores content, the method comprising:  
5 launching a request for content from the at  
6 least one requesting end point;  
7 propagating the request over the network to  
8 the at least one node;  
9 leaving a trail of the request at the at  
10 least one node; and, when content  
11 matching the request is located,  
12 returning a copy of the content to the at  
13 least one requesting endpoint over the  
14 trail of the request.
- 1 2. The method of claim 1, wherein the network  
2 comprises at least one other endpoint and the  
3 method further comprises:

4 propagating the request over the network to  
5 the at least one other endpoint; and  
6 leaving a trail of the request at the at  
7 least one other endpoint.

1 3. The method of claim 1, wherein the content  
2 further comprises a descriptor that enables the  
3 at least one node to identify an attribute of  
4 the content, and the step of launching a request  
5 further comprises:

6 launching the request with a request  
7 payload containing one or more  
8 instructions on what to locate in the  
9 descriptor.

1 4. The method of claim 3, further comprising:  
2 launching the request with a persistence  
3 indicator that indicates a duration  
4 for which the request is to be  
5 preserved at the at least one node.

1 5. The method of claim 4, wherein the step of  
2 leaving a trail of the request further  
3 comprises:

4 storing the request at the at least one  
5 node for a duration given by the  
6 persistence indicator.

1 6. The method of claim 3, wherein the at least one  
2 node further comprises a receiver for receiving  
3 the request and identifying an adjacent node  
4 from which the request is received, and the  
5 method further comprises:

6 comparing the request payload to the  
7 descriptor of the content stored at  
8 the at least one node; and when the  
9 request payload matches the  
10 descriptor,

11 forwarding the content with the matching  
12 descriptor to the adjacent node.

1 7. A system for delivering content over a network  
2 having at least one requesting endpoint and at

3       least one node, wherein the at least one node  
4       stores content, the system comprising:  
5             a request launcher for launching a request  
6                 for content from the at least one  
7                 requesting end point;  
8             a propagator for propagating the request  
9                 over the network to the at least one  
10                node;  
11            a request trailer for leaving a trail of  
12                the request at the at least one node;  
13                and, when content matching the request  
14                is located,  
15            a content forwarder for returning a copy of  
16                the content to the at least one  
17                requesting endpoint over the trail of  
18                the request.

1   8.   The system of claim 7, wherein the content  
2       further comprises a descriptor that enables the  
3       at least one node to identify an attribute of  
4       the content, and the request launcher further  
5       comprises:

6           a launch module for launching the request  
7           with a request payload containing one  
8           or more instructions on what to locate  
9           in the descriptor.

1   9.   The system of claim 8, further comprising:  
2           a persistence indicator that indicates a  
3           duration for which the request is to  
4           be preserved at the at least one node.

1   10.   The system of claim 9, wherein the request  
2       trailer further comprises:  
3           a storage module to enable storing the  
4           request at the at least one node for a  
5           duration given by the persistence  
6           indicator.

1   11.   The system of claim 8, wherein the at least one  
2       node further comprises a receiver for receiving  
3       the request and identifying an adjacent node  
4       from which it was received, and the system  
5       further comprises:

6           a comparator for comparing the request  
7           payload to the descriptor of the  
8           content stored at the at least one  
9           node; and  
10          a forwarder for forwarding, when the  
11          request payload matches the  
12          descriptor, the content with the  
13          matching descriptor to the adjacent  
14          node.

1   12. An article of manufacture for delivering content  
2   over a network having at least one requesting  
3   endpoint and at least one node, wherein the at  
4   least one node stores content, the article of  
5   manufacture comprising:  
6           at least one processor readable carrier;  
7   and  
8           instructions carried on the at least one  
9   carrier;  
10          wherein the instructions are configured to be  
11          readable from the at least one carrier by at  
12          least one processor and thereby cause the at  
13          least one processor to operate so as to:

14 launch a request for content from the at  
15 least one requesting end point;  
16 propagate the request over the network to  
17 the at least one node;  
18 leave a trail of the request at the at  
19 least one node; and, when content  
20 matching the request is located,  
21 return a copy of the content to the at  
22 least one requesting endpoint over the  
23 trail of the request.

1 13. A signal embodied in a carrier wave and  
2 representing sequences of instructions which,  
3 when executed by at least one processor, cause  
4 the at least one processor to deliver content  
5 over a network having at least one requesting  
6 endpoint and at least one node, wherein the at  
7 least one node stores content, by performing the  
8 steps of:

9 launching a request for content from the at  
10 least one requesting end point;  
11 propagating the request over the network to  
12 the at least one node;

13 leaving a trail of the request at the at  
14 least one node; and, when content  
15 matching the request is located,  
16 returning a copy of the content to the at  
17 least one requesting endpoint over the  
18 trail of the request.

1 14. A method for transferring content over a network  
2 comprising one or more nodes wherein the one or  
3 more nodes are enabled to route messages related  
4 to the transfer of content, the method  
5 comprising the steps of:  
6 transmitting a content registration message  
7 when new content is available at the  
8 one or more nodes, wherein the content  
9 registration message advertises to the  
10 one or more nodes that the new content  
11 is available;  
12 transmitting a request registration message  
13 when requesting content from the one  
14 or more nodes, wherein the request  
15 registration message advertises to the



16                   one or more nodes an interest in  
17                   locating a particular content;  
18                   transmitting a content deliver message when  
19                   the particular content requested is  
20                   located at the one or more nodes; and  
21                   transferring the particular content  
22                   requested or a copy of the particular  
23                   content requested toward the one or  
24                   more nodes from which the request  
25                   registration message was transmitted.

1   15. The method of claim 14, wherein the step of  
2       transmitting a content registration message  
3       further comprises:

4                   propagating the content registration  
5                   message to the one or more nodes; and  
6                   building a routing table entry at the one  
7                   or more nodes using the content  
8                   registration message.

1   16. The method of claim 14, wherein the step of  
2       transmitting a content registration message  
3       further comprises:

4 propagating the request registration  
5 message to the one or more nodes; and  
6 building a routing table entry at the one  
7 or more nodes using the request  
8 registration message.

1 17. The method of claim 14, wherein the step of  
2 transmitting a request registration message  
3 further comprises:

4 creating a request registration message  
5 trail.

1 18. The method of claim 17, wherein the one or more  
2 nodes are enabled to store messages and wherein  
3 the step of creating a request registration  
4 message trail further comprises:

5 storing a copy of the request registration  
6 message at each of the one or more  
7 nodes that route the request  
8 registration message.

1 19. The method of claim 17, wherein the step of  
2 transferring the particular content requested or

3 a copy of the particular content requested  
4 toward the one or more nodes from which the  
5 request registration message was transmitted  
6 further comprises:

7 routing the particular content requested or  
8 a copy of the particular content  
9 requested along a path marked by the  
10 request registration message trail.

1 20. The method of claim 14, wherein the request  
2 registration message further comprises:

3 information or operating instructions that  
4 are used to locate the particular  
5 content.

1 21. The method of claim 14, further comprising:

2 balancing the network load for transferring  
3 content by storing copies of content  
4 at the one or more nodes.